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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,575	09/22/2003	Thiemo Marx	PO-7791/LeA 36,167	9646

34947 7590 01/27/2006

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EXAMINER
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VJAYAKUMAR, KALLAMBELLA M

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/667,575

Applicant(s)

MARX ET AL.

Examiner

Kallambella Vijayakumar

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

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### DETAILED ACTION

Applicant's election with traverse of Group-2, Claim-3 in the reply filed on 11/07/2005 is acknowledged. The restriction requirement in office action mailed 10/07/2005 is withdrawn as the search encompassed all the groups. Claims 1-5 are pending with the application.

The examiner has considered the IDS filed 02/24/2004 and 09/22/2003.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Womelsdorf et al (WO 00/50503).

The US Patent 6,710,091 issued to Womelsdorf et al is being used as the English Translation of the WO 00/50503 in the present rejection.

The prior art teaches a dispersion of nanoparticles of ZnO with an average particle diameter of less than 15 nm formed by redispersing the ZnO gel in polar aprotic organic solvents containing triethanolamine modifier (amino alcohol) (Abstract, Col-3, Ln 5-10; Col-5, Ln 10-21, 39-48, Col-9, Example-7). All the limitations of the instant claims are met.

The reference is anticipatory.

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2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Womelsdorf et al (US Patent 6,710,091).

The prior art teaches a dispersion of nanoparticles of ZnO with an average particle diameter of less than 15 nm formed by redispersing the ZnO gel in polar aprotic organic solvents containing triethanolamine modifier (amino alcohol) (Abstract, Col-3, Ln 5-10; Col-5, Ln 10-21, 39-48). All the limitations of the instant claims are met.

The reference is anticipatory.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Womelsdorf et al (US Patent 6,710,091).

The composition and method of redispersing ZnO nanoparticles by Womelsdorf as set forth in rejection-2 under 35 USC 102(e) is herein incorporated.

The prior art does not disclose a coating composition or a molded article per the claims.

However, the prior art/s teach using the ZnO dispersion in coatings and paints, and the coating composition would be obvious.

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The prior art further teaches using the ZnO in the matrix modification of the polymers and vulcanization of rubbers and lattices, and the molded article would be obvious because these composite polymers and rubbers are used in molded articles.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Womelsdorf et al (WO 00/50503) in view of Takeda et al (US 6,200,680).

The composition and method of redispersing ZnO nanoparticles by Womelsdorf as set forth in rejection-1 under 35 USC 102(b) is herein incorporated.

The prior art does not disclose a molded article per the claim.

In the analogous art, Takeda et al teach a method of making ZnO particles with a particle size of 0.005-10 microns and resin molded articles containing the ZnO particles (Col 11, Ln 12-16, 37-40; Col-20, Ln 34-42; Col-24, Ln 45-65; Col-25, Ln 5-12)..

It would be obvious to a person of ordinary skill in the art to combine the prior art teachings to form molded articles containing ZnO dispersions/particles with reasonable expectation of success because the combined prior art teaching is suggestive of the claimed molded article

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Womelsdorf et al (WO 00/50503).

The composition and method of redispersing ZnO nanoparticles by Womelsdorf as set forth in rejection-1 under 35 USC 102(b) is herein incorporated.

The prior art does not disclose a coating composition or a molded article per the claims

However, the prior art/s teach using the ZnO dispersion in coatings and paints, and the instant claimed coating composition would be obvious.

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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kallambella Vijayakumar whose telephone number is 571-272-1324. The examiner can normally be reached on 8-5.30 Mon-Thu, 8-4.30 Alt Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMV  
January 18, 2006.

  
**Mark Kopec**  
**Primary Examiner**